



Missouri
Department of
Natural Resources

Draft Total Maximum Daily Load (TMDL)
SUMMARY OF COMMENTS AND RESPONSES

Coldwater Creek
WBID # 1706

St. Louis County, Mo.

Public Notice
June 29 – Aug. 13, 2012

Missouri Department of Natural Resources
Water Protection Program
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INTRODUCTION

U.S. Environmental Protection Agency (EPA) regulations require that total maximum daily loads (TMDLs) be subject to public review (40 CFR 130.7). The Missouri Department of Natural Resources placed the draft Coldwater Creek bacteria TMDL on a 45-day public notice and comment period from June 29, 2012 to Aug. 13, 2012. All original comments received during the Coldwater Creek public notice period are available online on the department's website at dnr.mo.gov/env/wpp/tmdl/1706-coldwater-ck-record.htm. Comments were received from the following groups or individuals:

City of Bridgeton
City of Florissant
City of Hazelwood
City of Independence
City of Woodson Terrace
Home Builders Association of St. Louis & Eastern Missouri
Metropolitan St. Louis Sewer District
Delcoure, Sandra
Hellmann, Doris
Powers, Rita
Skelly, Jim and Nancy

This document summarizes and paraphrases the comments received, provides the department's responses to those comments, and notes any changes made to the final TMDL resulting from comments. The final TMDL document incorporates suggested edits and language changes provided as public comments where such comments provide additional clarification or correct inaccurate statements or incorrect information. Suggested changes to the document that conflict with Missouri's water quality standards, department style guidelines, or elements required for EPA approval were not incorporated. The implementation section and corresponding elements, such as load reduction calculations, were removed from the final TMDL and this information was used in developing the Coldwater Creek Bacteria TMDL Implementation Plan to better facilitate citizen involvement and water quality improvement. The Coldwater Creek Bacteria TMDL Implementation Plan is available on the department's website at <http://dnr.mo.gov/env/wpp/tmdl/1706-coldwater-ck-record.htm>.

RESPONSE TO COMMENTS

(Public comments in bold)

1. Comment: **The Department should delay finalizing St. Louis area TMDLs until additional public participation activities (e.g., public meetings, workshops, etc.) are completed.**

A similar comment: **The potential cost, technical complexity, and stakeholder interest in the TMDL warrants additional public participation.**

1. Response: The department welcomes and appreciates stakeholder interest in the TMDL process and water quality issues related to Coldwater Creek. In addition to a 45-day public notice and comment period held from June 29, 2012 to Aug. 13, 2012, the department also hosted a public meeting in St. Louis County on Sept. 12, 2012 at the Daniel Boone Branch of the St. Louis County Library. At the meeting, the draft Coldwater Creek TMDL and five other draft TMDLs for bacteria impaired streams in St. Louis County were discussed. Following revisions to the TMDL document, a second public comment period for the draft Coldwater Creek TMDL along with a new draft implementation plan is scheduled for 90 days, from May 23, 2014 to Aug. 21, 2014.

2. Comment: **The TMDL components are inconsistent with Missouri's recreational use water quality criterion.**

A similar comment: **The modeling approach and loading capacity calculated for Coldwater Creek is inconsistent with Missouri's recreational water quality criteria and TMDL guidance developed by the EPA.**

2. Response: For the Coldwater Creek TMDL, the load duration curve approach was used. The load duration curve method allows for characterizing water quality concentrations (or water quality data) at different flow regimes and estimating load allocations and wasteload allocations for an impaired segment. The target concentration used to develop the load duration curve was the state's recreation season geometric mean criterion of 206 *E. coli* counts / 100 mL of water, which was applied as a daily target and is consistent with the Anacostia Ruling (*Friends of the Earth, Inc., et al. v. EPA*, No 05-5010, April 25, 2006) and EPA guidance in response to this ruling. Missouri's bacteria criteria for whole body contact recreation are applicable only during the defined recreational season. The recreational season is defined as being from April 1 to Oct. 31. Clarifying language was added to Section 10 of the TMDL to indicate that this is the period the TMDL addresses.

3. Comment: **The final TMDL must not include requirements that exceed the “maximum extent practicable” provisions within the St. Louis Metropolitan municipal separate storm sewer system (MS4) permit, extending beyond the phase II stormwater regulations.**

A similar comment: **The TMDL could result in stormwater management requirements that go beyond those already adopted for compliance with the MS4 permit and the federal consent decree.**

A similar comment: **The reference to MS4 stormwater management plans should be revised to state that these plans are to be developed to “reduce the discharge of pollutants from the MS4 system to the maximum extent practicable.”**

3. Response: The Clean Water Act provides that stormwater permits for MS4 discharges shall contain controls to reduce the discharge of pollutants to the “maximum extent practicable... and such other provisions as the Administrator or the State determines appropriate for control of such pollutants” (33 U.S.C. § 1342(p)(3)(B)(iii)). While the Coldwater Creek TMDL calculates a wasteload allocation for point source bacteria loading, the TMDL does not specify permitting requirements or effluent limits to achieve this load, nor does the TMDL require any specific implementation activities or BMPs. BMPs and other pollution abatement activities completed as required by the consent decree established as part of the *United States of America and the State of Missouri, and Missouri Coalition for the Environment Foundation v. Metropolitan St. Louis Sewer District*, No. 4:07-CV-1120, and those completed to comply with an accepted stormwater management plan or the six minimum control measures of MS4 permits are consistent with the types of practices needed to implement this TMD towards achieving wasteload allocation targets. Continued monitoring and assessment of Coldwater Creek will determine compliance with state water quality standards and the need for additional implementation activities. Voluntary BMP implementation by watershed groups or private citizens will also help achieve TMDL loading targets. Continued monitoring throughout the implementation process, will assist in identifying critical areas and be useful when selecting the appropriate BMPs. Should you have questions regarding the determination of permit requirements, please contact Mr. Chris Wieberg, Chief, Operating Permit Section, at 573-526-5781 or via email at chris.wieberg@dnr.mo.gov.

4. Comment: **The TMDL must use an adaptive management approach that includes implementation activities based upon achieving the highest water quality improvements at the lowest cost.**

A similar comment: **The TMDL should include a phased or adaptive management component for implementation and future revisions due to the uncertainties and complexities with this study.**

A similar comment: **The TMDL should be re-written to be a phased TMDL that includes revision of the water quality target(s), collection of additional data and information, and adjustments to the wasteload and load allocations.**

4. Response: TMDLs are required to meet water quality standards (40 CFR 130.7(c)(1)), and this is done absent of cost considerations. However, all Missouri TMDLs are phased TMDLs, and use an adaptive implementation approach that allows for an iterative process that makes progress toward achieving water quality goals, while using any new data and information to reduce uncertainty and adjust implementation activities. As noted in the response to Comment 3, the Coldwater Creek TMDL does not require any specific implementation activities or BMPs. This provides flexibility in how and where pollutant management is accomplished. The department expects implementation practices to occur over a period of time, but also within schedules identified in stormwater management plans, state operating permits, or as specified in the Metropolitan St. Louis Sewer District's consent decree. A Coldwater Creek Bacteria TMDL Implementation Plan has been developed to help guide implementation activities and facilitate the adaptive implementation approach.

5. Comment: **The costs should largely be the responsibility of those who create the mandates with the exception of flagrant violations.**

A similar comment: **MS4s should be ranked in order of importance, as should non-MS4 sources so the public funds can be appropriately aimed at the likely sources.**

A similar comment: **Maximize grant funding to assist with TMDL implementation.**

5. Response: A variety of grants and loans may be available to assist watershed stakeholders with developing and implementing watershed plans, controls and practices to meet the required wasteload and load allocations in the TMDL. The Coldwater Creek Bacteria TMDL Implementation Plan provides additional information for potential funding opportunities. For potential funding opportunities through the Missouri Department of Natural Resources, please visit the department's Wastewater Financial Assistance website at dnr.mo.gov/env/wpp/srf/wastewater-assistance.htm or the department's Section 319 Nonpoint Source Implementation Program website at dnr.mo.gov/env/wpp/nps/index.html.

6. Comment: **The analysis of causes should meet rigorous scientific standards.**

A similar comment: **The proposed solutions should address the sources.**

A similar comment: **The TMDL approach does not adequately distinguish between bacteria sources within the watershed.**

A similar comment: **The MS4s in the study have omitted MoDOT.**

A similar comment: **The TMDL does not adequately consider all sources of bacteria that may be impacting whole body contact recreation category B attainment in Coldwater Creek.**

A similar comment: **More detailed, local information must be analyzed and used in assessing bacteria sources.**

A similar comment: **The Missouri Department of Transportation MS4 permit should be incorporated into the TMDL as a point source and must be included in the wasteload allocation.**

A similar comment: **The Lambert-St. Louis International Airport and other site-specific permits should be incorporated into the TMDL and the wasteload allocation as probable point sources.**

A similar comment: **It is arbitrary and unrealistic to assign permit holders a wasteload allocation equal to zero.**

A similar comment: **The wasteload allocation included in the TMDL is inaccurate given the technical defects with the load duration curve approach.**

6. Response: All potential sources contributing to the impairment are considered in the Coldwater Creek TMDL. Section 3 of the TMDL contains a detailed source inventory for point and nonpoint sources. Wasteload allocations for point sources can be found in Section 7 of the TMDL and load allocations for nonpoint sources can be found in Sections 8. Although the Missouri Department of Transportation (MoDOT) MS4 area was not explicitly identified in the draft TMDL placed on public notice, the allowable point source loading remains entirely allocated to the MS4 wasteload allocation as presented in Table 8 of the TMDL. Section 3.1.3 and Table 6 of the TMDL have been amended to include the MoDOT MS4 permit. Wasteload and load allocations have been modified to account for the additional MS4 area within the watershed that is regulated by the MoDOT MS4 permit. The total MS4 area within the watershed increased by 0.2 percent from what was originally presented due to the inclusion of the MoDOT area. Because there are differences in the sources of bacteria originating from highway systems as opposed to urban residential areas or urban green spaces, the department does not have sufficient data to adequately disaggregate the MS4 wasteload allocation among the various permitted entities. If future monitoring data identifies specific source loading, the MS4 wasteload allocation may be disaggregated and distributed accordingly among the various MS4 sources. As stated in the TMDL regarding the other facilities listed in Tables 5 and 6, the department assumes activities in the watershed will be conducted in compliance with all permit conditions, including monitoring and discharge limitations. For this reason, it is expected that compliance with these permits will result in bacterial loading at or below applicable targets. These facilities are not expected to cause or contribute to the bacteria impairment of Coldwater Creek and are therefore assigned a wasteload allocation of zero. If at any time the department determines that the water quality of streams in the watershed is not being adequately protected, then the department, per 10 CSR 20-6.010(13)(C), may require the owner or operator of the permitted site to obtain a site-specific operating permit. This assumption and methodology is consistent with the approach applied in other TMDLs developed by the department and approved by EPA.

7. Comment: **It is premature to suggest remedies to bacteria without considering the elimination of sanitary sewer overflows (SSOs).**

A similar comment: **The water quality improvements and load reduction by the District's upcoming elimination of constructed SSOs and other sanitary sewer improvements must be taken into account.**

A similar comment: **TMDL implementation should allow sanitary sewer improvements to proceed prior to other restoration activities.**

A similar comment: **The timing and necessity for TMDL issuance and implementation should take into account federal consent decree obligations and resource allocations.**

7. Response: The department recognizes and appreciates the work that has been done and is being planned to improve water quality in the Metropolitan St. Louis Sewer District's service area. The TMDL references the district's consent decree and MS4 permitting requirements as evidence that improvements and management strategies consistent with those needed to implement the TMDL are being considered and conducted. These improvements and existing regulations will operate in concert with TMDL implementation and will be described in more detail in the Coldwater Creek Bacteria TMDL implementation plan.

8. Comment: **My property borders Coldwater Creek. Wal-Mart proposes to build a large store near me – across the creek. Their water runoff would go directly into Coldwater Creek.**

A similar comment: **I am concerned that there is a Wal-Mart coming in and that water would be going into the creek.**

A similar comment: **The new Wal-Mart should not be built on Coldwater Creek as planned.**

A similar comment: **My husband and I are very concerned about Wal-Mart contributing to the already polluted Coldwater Creek which backs up to our backyard. This creek has enough load on it as it is and has eroded a lot of our yard away.**

8. Response: The department appreciates the comments and interest in protecting the water quality of Coldwater Creek. Issues specific to the construction of a Wal-Mart store in the Coldwater Creek watershed are beyond the scope of the TMDL. However, because the entire Coldwater Creek watershed is regulated through MS4 permits, any runoff contributions from this site are expected to meet the conditions specified in the MS4 permit and the permittee's stormwater management plan. Additionally, construction activities will likely require a land disturbance permit from the department and activities would be required to be conducted in compliance with all permit conditions, including monitoring and discharge limitations. Compliance with the state's land disturbance permit requirements will result in bacteria loading at or below applicable targets. Post-construction runoff is regulated as a condition of MS4 permit requirements. For questions related to permitting requirements related to construction activities

in general or specific to the proposed Wal-Mart store, please contact Mr. Jim Rhodes of the Missouri Department of Natural Resources St. Louis Regional Office, at 314-416-2958 or via email at jim.rhodes@dnr.mo.gov.

9. Comment: **The TMDL land use and watershed information must be supplemented with more accurate, local data. This comment was supplemented with a parcel map of the watershed showing sewer and nonsewer areas.**

9. Response: The department appreciates the additional data and recognizes the usefulness of this information, specifically in regards to implementation of the TMDL. The land use data included in the TMDL provides a general description of watershed conditions in order to characterize the watershed's land use characteristics. The TMDL loading capacity, as well as wasteload and load allocations calculated in the TMDL, were derived independently of land use data and no additional land use data is needed at this time. However, as previously mentioned, more accurate and localized data will be useful in identifying critical areas and targeting implementation activities. Section 3.2.3 of the TMDL has therefore been expanded to include additional discussion of sewer and nonsewer areas within the Coldwater Creek watershed. No changes to the calculated loading capacity or wasteload and load allocations occurred as a result of this revision.

10. Comment: **Recreational season datasets that are skewed, predominantly composed of wet-weather samples, or are greater than seven years old are not representative and therefore should not be used to calculate TMDL components.**

A similar comment: **Discrete bacteria samples are not representative of daily average *E. coli* loads in the Coldwater Creek watershed.**

10. Response: Calculations of loading capacity were based strictly on the whole body contact recreation category B criterion concentration and calculated stream flow occurrence frequency values. Observed bacteria data were used solely for estimating current bacteria loading from the various sources within the watershed and to estimate reductions to aid in targeting implementation activities to meet TMDL goals. Observed bacteria data were not used for calculating overall loading capacity or wasteload and load allocations. Information pertaining to estimates of existing loads and load reductions to Coldwater Creek have been removed from the final TMDL and can be found in the Coldwater Creek Bacteria TMDL Implementation Plan. To reduce uncertainty that the available data is representative of current conditions, only the last five years of available bacteria data were used to calculate existing loads in the implementation plan.

11. Comment: **The flow adjustment approach does not accurately estimate current bacteria loads within the classified segment of Coldwater Creek.**

11. Response: The flow adjustment approach used in the Coldwater Creek TMDL to develop the load duration curve is based on an area ratio calculated from the drainage area of a stream gage

located on Coldwater Creek (40.4 square miles) and the drainage area of the entire watershed (44.5 square miles). Because the stream gage is located within the same watershed as Coldwater Creek, as well as on the stream itself, the assumptions associated with this approach, such as similarity of land use, rainfall, and soil characteristics are reasonable. This estimation technique is an established methodology for TMDL load duration curve development and is supported by EPA guidance. As noted in response to Comment 10, information pertaining to estimates of existing loads and load reductions to Coldwater Creek have been removed from the final TMDL and can be found in the Coldwater Creek Bacteria TMDL Implementation Plan.

12. Comment: The effect of data transcription or site identification discrepancies must be considered in any future TMDL. The commenter provided four *E. coli* values from Appendix A of the TMDL, which may differ from U.S. Geological Survey (USGS) records. The data in question were collected on Dec. 11, 1996, Aug. 26, 1997, Oct. 29, 2002, Oct. 5, 2004, and June 6, 2006.

12. Response: USGS reports water quality data by “water year,” which is defined as the 12-month period from Oct. 1 through Sept. 30. For this reason, the Dec. 11, 1996 *E. coli* value of 61/100mL can be found in the 1997 annual report book. This value is correct and was not changed in the TMDL. For data collected on Aug. 26, 1997, the value recorded in the USGS annual report book is 1,700/100mL, which is the value used in the TMDL. The USGS online NWIS database provides an estimated 1,800/100mL as stated by the commenter. The Department does not have information as to why this discrepancy exists. No changes were made to the Aug. 26, 1997 value included in the TMDL. The commenter is correct that a single *E. coli* measurement of 5,400/100 mL was collected on Oct. 29, 2002. Duplicate samples were collected on that date, but only one was analyzed for bacteria. This has been corrected in the TMDL. Duplicate *E. coli* samples were also collected by the USGS on Oct. 5, 2004. In this case, two *E. coli* values were reported. These values were 160/100 mL and 110/100 mL. The Department used the average of the two values, which in this case is 135/100 mL. However, the TMDL incorrectly used 137/100 mL. The TMDL has been corrected to use the correct average. For the data collected on June 6, 2006, USGS reports two *E. coli* values of 900/100mL and 1,400/100mL for this date. Again, the average of the two values (1,150/100mL) was used. Because TMDL components were calculated independently of the observed data, no changes to the loading capacity or wasteload and load allocations resulted from corrections to observed data values.

13. Comment: The TMDL should analyze, consider, and take into account the importance of bacterial sources in the context of human health risks and this factor should be an important aspect of TMDL development and implementation planning.

A similar comment: **The water quality condition targeted by the TMDL is not sufficiently linked with human health risk in the Coldwater Creek watershed.**

A similar comment: **The TMDL target should consider the effects of bacteria source on human health risk.**

13. Response: *E. coli* bacteria are used as indicators of the risk of waterborne disease from pathogenic bacteria or viruses. High counts of *E. coli* are an indication of fecal contamination and an increased risk of pathogen-induced illness to humans. Infections due to pathogen-contaminated waters include gastrointestinal, respiratory, eye, ear, nose, throat, and skin diseases. To address these health risks, the TMDL targets instream bacteria levels using *E. coli* as the primary measurement parameter. In Missouri's water quality standards at 10 CSR 20-7.031(4)(C), specific numeric criteria are given for the protection of the whole body contact recreation use. For category B waters, *E. coli* counts, measured as a geometric mean, shall not exceed 206 counts/100 mL of water during the recreational season. An evaluation of the specific risks associated with various sources of *E. coli* is beyond the scope of the TMDL and TMDLs must be written to address current, EPA-approved water quality standards. Implementation activities should be consistent with reducing pollutants from the sources identified in the TMDL, but such risk factors could be considered when identifying critical areas.

14. Comment: **The source assessment should distinguish between natural or background sources of bacteria versus anthropogenic sources.**

A similar comment: **Wasteload allocations and TMDL targets must consider natural sources.**

14. Response: The Department acknowledges that bacteria contributions to Coldwater Creek may occur from wildlife (background) as well human-caused sources. Section 3 of the TMDL discusses such background sources as components of urban stormwater runoff. For Coldwater Creek, loading from these sources in areas of the watershed regulated through MS4 permitting are included in the MS4 wasteload allocation. For areas of the watershed that are not regulated through MS4 permits, this loading is allocated to the nonpoint source load allocation. Individuals or groups conducting implementation activities in the watershed may consider contributions from background sources to aid in identifying critical areas and selecting appropriate BMPs.

15. Comment: **The TMDL should not use the USGS microbial source tracking study to relate bacteria concentrations to presence of upstream sanitary sewer overflows.**

15. Response: The USGS microbial source tracking study referenced by the TMDL is *Occurrence and Sources of Escherichia coli in Metropolitan St. Louis Streams, October 2004 through September 2007*. The purpose of the report, as described in the introduction of the document, is to “characterize the occurrence, distribution, and sources of *E. coli* in metropolitan St. Louis streams.” The study included portions of the Missouri and Mississippi rivers, the Coldwater Creek watershed, and several other watersheds of similar size to the Coldwater Creek watershed. These watersheds have similar geology, climate, land use, and sources of bacteria as those found in the Coldwater Creek watershed. The USGS report also provides separate conclusions for the small watershed areas and the larger Missouri and Mississippi rivers sites. The USGS study concludes, “...average instream *E. coli* densities were correlated strongly with the percent of upstream impervious cover and at small basin sites, the combined number of upstream CSOs and SSOs.” Due to this study being completed in watersheds with similar

characteristics as the Coldwater Creek watershed as well as the Coldwater Creek watershed itself, the department believes it is reasonable and appropriate to reference this study for identifying potential sources of bacteria in the Coldwater Creek watershed.

16. Comment: **The language regarding “the presence of sewerage system infrastructure”, “mismanagement”, and “sewage discharge” on page 12 and any subsequent references should be deleted. This is broad-sweeping language that implies that simply the presence of a sewerage system will result in non-attainment of the whole body contact recreation category b designated use.**

16. Response: The language in question was intended to show why the sewerage system present in the Coldwater Creek watershed is a potential source for bacteria contributions to Coldwater Creek. It is not the department’s belief that the mere presence of a sewerage system equates to non-attainment, only that the potential for bacteria contributions from these types of systems exists due to potential sanitary sewer overflows that may result for a variety of reasons. The language in the TMDL has been redrafted to better illustrate this point and to refer to sewerage systems in a more general sense.

17. Comment: **The district’s supplemental environmental project to eliminate some septic systems should be put into proper perspective.**

17. Response: The department appreciates the additional information regarding this portion of the Metropolitan St. Louis Sewer District’s consent decree. The language in the TMDL has been revised to better characterize the role that the supplemental environmental project may play in regards to TMDL implementation.

18. Comment: **The load duration curve must be adjusted so that sample data and TMDL target have comparable averaging periods. Load duration curves should be calculated from data and criteria that have the same averaging period.**

18. Response: The target bacteria concentration used to develop the TMDL load duration curve was applied as a daily target. This method provides the same averaging period for both the observed data and the TMDL targets as shown in Figure 9 of the TMDL. As noted in response to Comment 10, calculations of loading capacity were based strictly on the whole body contact criterion concentration and calculated stream flow occurrence frequency values. Observed bacteria data were not used for calculating the overall loading capacity or wasteload and load allocations.

19. Comment: **Methods used to determine the loading capacity result in a margin of safety that is unrealistic, excessive, and significantly overestimates uncertainty.**

19. Response: A margin of safety is required in TMDL calculations to account for uncertainties in scientific and technical understanding of water quality in natural systems. For the Coldwater Creek TMDL, the margin of safety was expressed as an explicit 10 percent portion of the loading capacity the magnitude of which varies with flow. Additionally, the fact that bacteria decay or die off was not accounted for in the TMDL serves as a conservative assumption that provides an additional, although likely minor, implicit margin of safety. As noted in response to Comment 2, the target concentration used to develop the TMDL load duration curve was the state's whole body contact recreation category B criterion applied as a daily target. This method provides a level of protection that will support whole body contact recreation. Assessment of Coldwater Creek for compliance with water quality standards will be consistent with the department's water quality assessment protocols and 303(d) listing methodology.

20. Comment: **An explicit margin of safety is not needed as bacteria are treated as a conservative parameter in the load duration curve modeling approach. Treating bacteria as a conservative parameter represents an implicit margin of safety and renders additional explicit safety factors unnecessary.**

A similar comment: **The load duration curve approach provides a very limited linkage between watershed processes and bacteria fate and transport mechanisms.**

20. Response: Although bacteria are treated as a conservative pollutant and the TMDL notes that this may serve as an additional implicit margin of safety, there is insufficient information to assume that bacterial decay rates alone would adequately serve as a sole margin of safety. There is a lack of available data specific to bacteria die off rates, time of travel, and sediment bacteria resuspension in the Coldwater Creek watershed (or other comparable reference watersheds) to account for any modeling uncertainties through the sole use of the implicit margin of safety.

21. Comment: **If the load duration curve approach is retained, the department should calculate separate load duration curves for each monitoring site in the watershed.**

21. Response: As previously noted, calculations of loading capacity were based strictly on the whole body contact recreation category B criterion concentration and calculated stream flow occurrence frequency values. This provides TMDL targets that attain water quality standards at the outlet of the impaired watershed throughout the recreational season. For this reason, only a single load duration curve is necessary.

22. Comment: **The Coldwater Creek TMDL should consider feasible management options and actual risk during wet weather conditions.**

A similar comment: **The TMDL should be revised to exclude extremely high flow events.**

22. Response: Risks associated with whole body contact recreation during wet weather conditions, are beyond the scope of the TMDL process. However, the relationship between flows and recreational activities may be a valuable consideration when selecting or locating BMPs during implementation of the TMDL to maximize human health protections. For TMDL purposes, the TMDL target concentration is set at the state's whole body contact recreation category B criterion at all flows. The state's water quality standards do not provide separate criteria for higher flows, nor is there an EPA-approved flow exception for the applicability of recreational uses. Since TMDLs are required to be written to achieve water quality standards, it would not be appropriate to include allocations that do not achieve the whole body contact recreation criterion at all flows.

23. Comment: **Wasteload allocation and implementation expectations must consider the limitations of treatment provided by structural and non-structural best management practices.**

23. Response: The Coldwater Creek TMDL is written to meet water quality standards per 40 CFR §130.7(c)(1). Cost considerations and available treatment technologies cannot be considered in TMDL development. Potential sources contributing to the bacteria impairment of Coldwater Creek are discussed in Section 3 of the TMDL and include both point and nonpoint sources. Best management practices (BMPs) and other pollution abatement activities completed as required by the Metropolitan St. Louis Sewer District's consent decree, and those completed in accordance with an accepted stormwater management plan or to comply with the six minimum control measures of MS4 permits are consistent with the types of practices needed to implement this TMDL. Voluntary BMP implementation by watershed groups or private citizens will also help achieve TMDL loading targets. All Missouri TMDLs are phased TMDLs and use an adaptive implementation approach that provides for an iterative process that makes progress toward achieving water quality goals, while using any new data and information to reduce uncertainty and adjust implementation activities. Continued monitoring throughout the implementation process will assist in identifying critical areas and be useful when selecting the appropriate BMPs.

24. Comment: **It is not clear if sanitary sewer overflows are included in the wasteload allocation.**

24. Response: Sanitary sewer overflows, although not permitted or authorized under the Clean Water Act, are considered point sources of bacteria. TMDL allocations to point sources are included in the wasteload allocation. The Coldwater Creek TMDL assigns a wasteload allocation of zero to sanitary sewer overflows. Any potentially contradictory language in the TMDL regarding this wasteload allocation has been removed.

25. Comment: **The TMDL implementation plan should include the opportunity to develop site-specific recreational use criteria.**

25. Response: TMDLs are written to address current, EPA-approved water quality standards. However, the department will, through the triennial review process, continue to review and modify or adopt water quality standards, where appropriate. Suggestions for revised recreational uses or criteria can be submitted to the department for review during the next triennial water quality standards review. Should the state modify the whole body contact category B criterion, promulgate new single sample maximum criteria, or change the designated uses assigned to Coldwater Creek, the department may reopen and modify the TMDL.

26. Comment: **The implementation plan should target water quality criteria, rather than specific load reductions, as its ultimate goal.**

26. Response: The department agrees that the ultimate goal of the TMDL is to restore Coldwater Creek to the point where water quality standards are achieved and water quality sampling shows compliance with the appropriate whole body contact recreation use criterion. Load reductions are included in the Coldwater Creek Bacteria TMDL Implementation Plan to provide interim and final goals for BMP and TMDL implementation activities, particularly those using Section 319 funds. Assessment of Coldwater Creek for compliance with water quality standards will be consistent with the department's 305(b) and 303(d) assessment protocols and listing methodologies.

27. Comment: **The TMDL should include other district actions planned for the watershed in the discussion about reasonable assurance.**

27. Response: Additional language pertaining to the Metropolitan St. Louis Sewer District's consent decree obligations has been added to Section 12 (formerly Section 13) of the TMDL to provide additional reasonable assurance that TMDL loading targets will be met.

28. Comment: **The TMDL should rely on the maximum extent practicable standard for reasonable assurance in stormwater permits.**

28. Response: Section 12 of the TMDL provides reasonable assurance of permitted point source reductions through discussion of the National Pollutant Discharge Elimination System (NPDES) permitting program, of which stormwater permits are a part. Additional language from Section 402(p)(3)(B)(iii) of the Clean Water Act, which is specific to MS4 permits, has been added.

29. Comment: **I live near the creek. I have seen the creek get wider and wider and take down even big cottonwood trees.**

29. Response: The department appreciates the additional observations about conditions on Coldwater Creek. Physical and habitat conditions of Coldwater Creek are beyond the scope of the TMDL. However, the department recognizes the need to restore and maintain the physical integrity of a water body in addition to its chemical and biological components. The Missouri Department of Conservation maintains information specific to maintenance of stream bank erosion on their website at <http://mdc.mo.gov/landwater-care/stream-and-watershed-management>. Contact information for Department of Conservation personnel in St. Louis County can also be found online at <http://mdc.mo.gov/regional-contacts?county=101>. Additionally, it is recommended that the commenter contact the local county or municipal governments about concerns related to the physical conditions of Coldwater Creek. Funding opportunities for riparian restoration and stream bank stabilization may also be available through the department's Section 319 Nonpoint Source Implementation Program (dnr.mo.gov/env/wpp/nps/index.html).

30. Comment: **The *E. coli* in Coldwater Creek should be eliminated from the creek as soon as possible. Coldwater Creek should be returned to the clean, pure stream it once was before the radioactive waste, raw sewage from overflows during heavy rains and other toxins entered the creek.**

30. Response: The department appreciates the commenter's support and interest in the TMDL process. The ultimate goal of the TMDL is to restore attainment of the whole body contact recreation category B designated use in Coldwater Creek. All Missouri TMDLs are phased TMDLs and use an adaptive implementation approach that provides for an iterative process that makes progress toward achieving water quality goals, while using any new data and information to reduce uncertainty and adjust implementation activities. The department expects implementation practices to occur over a period of time, but also within schedules identified in stormwater management plans, state operating permits, or as specified in the Metropolitan St. Louis Sewer District's consent decree.

-- END SUMMARY OF COMMENTS AND RESPONSES